

AMENDMENTS TO THE CLAIMS

1. – 66. (Cancelled)

67. (Currently Amended) A method of forming an image on a printing plate precursor comprising:

providing a printing plate precursor comprising a substrate and a negative working oleophilic image forming layer applied onto the substrate, wherein the image forming layer comprises a polymeric binder consisting of polymeric material derived from phenol and a polymeric crosslinking material consisting of polymeric material derived from phenol ~~at least one polymeric material having a hydroxyl, vinyl, acrylate or methacrylate moiety or a combination or derivative thereof;~~

imagewise contacting the image forming layer with a catalyst comprising an acid; and

thermally treating the image forming layer such that the polymeric material in imagewise contacted portions of the image-forming layer undergoes a sufficient crosslinking reaction to cause the imagewise contacted portions of the image forming layer to become less developable in a developer liquid than portions of the image forming layer that are not contacted with the catalyst.

68. (Currently Amended) The method of claim 67 wherein the polymeric binder and the polymeric crosslinking agent consist of the same polymeric material which is capable of self-crosslinking upon thermal treatment in the presence of the catalyst.

69. (Cancelled)

70. (Currently Amended) The method of claim 67 wherein the polymeric binder consisting of polymeric material derived from phenol includes image-forming layer comprises a novolak resin.

71. (Cancelled)

72. (Currently Amended) The method of claim 67 ~~[[71]]~~ wherein the polymeric crosslinking material is capable of undergoing a condensation reaction with the [[a]] polymeric binder upon thermal treatment in the presence of the catalyst.

73. (Currently Amended) The method of claim 67 ~~[[71]]~~ wherein the polymeric crosslinking material is capable of undergoing a condensation reaction with the [[a]] polymeric binder upon thermal treatment at a temperature range of between about 20 and about 200 °C in the presence of the catalyst.

74. (Currently Amended) The method of claim 67 wherein the polymeric crosslinking material consisting of polymeric material derived from phenol includes image forming layer ~~comprises~~ a resole resin.

75. (Previously Presented) The method of claim 74 wherein the resole resin is prepared from a C₁-C₅ alkylphenol and formaldehyde, a tetra C₁-C₅ alkoxymethyl glycoluril, poly(4-methoxymethylstyrene), poly[(N-methoxymethyl) acrylamide], poly[(N-isobutoxymethyl) acrylamide], or a butylated phenolic resin.

76. (Currently Amended) The method of claim 67 wherein the polymeric binder consisting of polymeric material derived from phenol includes image-forming layer ~~comprises~~ a novolak resin and the polymeric crosslinking material consisting of polymeric material derived from phenol includes a resole resin.

77. (Previously Presented) The method of claim 67 wherein the catalyst comprises a liquid mixture.

78. (Previously Presented) The method of claim 77 wherein the liquid mixture comprises polymeric binders, dispersing agents, humectants, biocides, surfactants, viscosity builders, colorants, pH adjusters, drying agents, defoamers or combinations thereof.

79. (Previously Presented) The method of claim 77 wherein the liquid mixture has a surface tension of between about 20 and about 60 dynes/cm.

80. (Previously Presented) The method of claim 77 wherein the liquid mixture has a surface tension of between about 30 and about 50 dynes/cm.

81. (Previously Presented) The method of claim 67 wherein the thermal treatment step comprises heating the image forming layer at between about 20 and about 200 °C.

82. (Previously Presented) The method of claim 67 wherein the thermal treatment step comprises heating the image forming layer at between about 75 and about 150 °C.

83. (Previously Presented) The method of claim 67 wherein the thermal treatment step comprises heating the image forming layer at between about 90 and about 130 °C.

84. (Previously Presented) The method of claim 67 wherein thermal treatment step occurs for between about 15 and about 300 seconds.

85. (Previously Presented) The method of claim 67 wherein the thermal treatment step occurs for between about 30 and about 90 seconds.

86. (Previously Presented) The method of claim 67 further comprising the step of contacting the image forming layer with a developer liquid to remove the portions of the image forming layer that are not contacted with the catalyst.

87. (Previously Presented) The method of claim 86 wherein the developer liquid comprises an aqueous alkaline developer.

88. (Previously Presented) The method of claim 86 wherein the developer liquid has a pH of at least about 11.

89. (Previously Presented) The method of claim 86 wherein the developer liquid has a pH of at least about 12.

90. (Previously Presented) The method of claim 86 wherein the developer liquid has a pH of between about 12 and about 14.

91. (Previously Presented) The method of claim 86 wherein the developer liquid comprises at least one metal silicate.

92. (Previously Presented) The method of claim 91 wherein the developer liquid has a ratio of silicon oxide to metal oxide of at least about 0.3.

93. (Previously Presented) The method of claim 91 wherein the developer liquid has a ratio of silicon oxide to metal oxide of between about 0.3 and about 1.2.

94. (Previously Presented) The method of claim 91 wherein the developer liquid has a ratio of silicon oxide to metal oxide of between about 0.6 to about 1.1.

95. (Previously Presented) The method of claim 91 wherein the developer liquid has a ratio of silicon oxide to metal oxide of between about 0.7 to about 1.0.

96. (Previously Presented) The method of claim 91 wherein the metal silicate comprises lithium silicate, sodium silicate, potassium silicate or a combination thereof.

97. (Previously Presented) The method of claim 86 wherein the developer liquid is free of organic solvents.

98. (Previously Presented) The method of claim 86 wherein the developer liquid comprises at least one hydroxide moiety.

99. (Previously Presented) The method of claim 98 wherein the developer liquid comprises ammonium hydroxide, sodium hydroxide, lithium hydroxide, potassium hydroxide or a combination thereof.

100. (Previously Presented) The method of claim 86 wherein the developer liquid comprises a combination of a metal silicate and a hydroxide containing compound.

101. (Previously Presented) A method of forming an image on a printing plate precursor comprising:

providing a printing plate precursor comprising a substrate and a negative working oleophilic image forming layer applied onto the substrate, wherein the image forming layer comprises at least one polymeric material comprising a poly(4-hydroxystyrene), poly(4-hydroxystyrene/methylmethacrylate), poly(2-hydroxyethylmethacrylate/cyclohexylmethacrylate), poly(2-hydroxyethylmethacrylate/methylmethacrylate), poly(styrene/butylmethacrylate/methylmethacrylate/methacrylic acid), poly(butylmethacrylate/methacrylic acid), poly(vinylphenol/2-hydroxyethylmethacrylate), poly(styrene/n-butylmethacrylate/2-hydroxyethylmethacrylate/methacrylic acid), poly(styrene/ethylmethacrylate/2-hydroxyethylmethacrylate/methacrylic acid), poly(N-methoxymethyl methacrylamide/2-phenylethyl methacrylate/methacrylic acid) or combinations or derivatives thereof;

imagewise contacting the image forming layer with a catalyst comprising an acid; and

thermally treating the image forming layer such that the polymeric material in imagewise contacted portions of the image forming layer undergoes a sufficient crosslinking reaction to cause the imagewise contacted portions of the image forming layer to become less developable in a developer liquid than portions of the image forming layer that are not contacted with the catalyst.

102. (Previously Presented) A method of forming an image on a printing plate precursor comprising:

providing a printing plate precursor comprising a substrate and a negative working oleophilic image forming layer applied onto the substrate, wherein the image forming layer comprises at least one polymeric material comprising a C₁-C₅ alkoxymethyl melamine resin, a C₁-C₅ alkoxymethyl glycoluril resin, a poly(C₁-C₅ alkoxy-methylstyrene) resin, a poly(C₁-C₅-alkoxymethylacrylamide) resin or a derivative or combination thereof;

imagewise contacting the image forming layer with a catalyst comprising an acid; and

thermally treating the image forming layer such that the polymeric material in imagewise contacted portions of the image forming layer undergoes a sufficient crosslinking reaction to cause the imagewise contacted portions of the image forming layer to become less developable in a developer liquid than portions of the image forming layer that are not contacted with the catalyst.